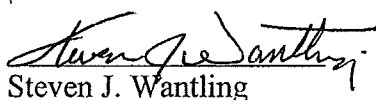


DECLARATION OF STEVEN J. WANTLING

I, Steven J. Wantling, hereby declare:

1. My home address is 641 Founders Park Drive West, Hoover, Alabama, 35226;
2. I am an inventor for the subject U.S. Patent Application having the serial number 10/528,471 as well as the US Provisional Patent Application having the serial number 60/435,329 which was filed on December 20, 2002.
3. The U.S. Patent Application having the serial number 10/528,471 claims benefit of the US Provisional Patent Application having the serial number 60/435,329.
4. The use of a "C₂₄-C₃₆ polymerized methylene coupled alkyl phenol" is disclosed in both the 10/528,471 application and the 60/435,329 application.
5. The use of a "C₂₄-C₃₆ polymerized methylene coupled alkyl phenol," referred to in the laboratory vernacular of the time as "alkyl phenol" in an application consistent with the present application was made at least as early as November 8, 2001. I attach copies of my lab book pages showing the work that was done with these compounds.
6. I am an inventor of U.S. Patent No. 7,294,189 and of the application having Serial Number 60/417,770.
7. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any registration resulting therefrom.

Signed:


Steven J. Wantling

Date: 15 Mar 2009

5

PROJECT NAME Duplicate Ha production NOTEBOOK NO. 2542

11-8-01

Objective: Make 109-1 (EW102) using formula from
Ha. plant

Procedure: material added in the following order

Wax side:

Montanwax 18

Alkyl phenol 3

3816 Wax 201

Water side:

Water 352.5

Corn Starch 9.75

Borax 2.25

Sodium Lig 9

KOH (45%) 4.5

600

1. The material was added one at a time in the order that they are listed.
2. When both mixtures (wax side & water side) reached $\sim 87^{\circ}\text{C}$ (190°F) the wax was poured into water.
 - a. The water & starch were mixed and slowly heated to $\sim 80^{\circ}\text{C}$ with stirring then the Borax, Lig & KOH was added. With stirring mixture was continued heating to 85°C .
3. The premix was stirred together for 5 min then placed in hot oven while homogenizer was gotten ready.
4. Premix put thru homogenizer with pressure setting 2nd stage - 400 1st stage 3700 lbs

SIGNATURE

Bonnie S. Zepka

READ AND UNDERSTOOD

DATE

11-8-2001

DATE

11-8-20

PROJECT NAME *Optimize Components in EW102* NOTEBOOK NO. *2542*

2-13-02

Objective: ① Reproduce the stable emulsion which Columbus
he made 1/13/02 as reported by James Living
② Vary ratio to optimize different components in EW102

Procedure: weigh waxy phase heat to 85°C - 90 °C
Weigh water phase, add corn starch & Borax, heat to 85°C
pour waxy phase into water phase under agitation.
Mix 5 min
Put through bench homogenizer 3500 RPM X 1

Raw Material	EW 102*(43-1)		SA (43-2)		SB (43-3)		SC (43-4)	
	%	gms	%	gms	%	gms	%	gms
Montan	3.28	13.12	3.3	13.2	3.3	13.2	3.3	13.2
38% D Wax	33.11	132.44	25	100	33	132	33	132
alkyl Phenol 319H	0.49	1.96	10	40	0	0	0.5	2
Water phase								
Water	58.54	234.16	57.12	228.48	59.1	236.4	60.08	240.32
Corn Starch	1.6	6.4	1.6	6.4	1.6	6.4	1.6	6.4
Borax	0.37	1.48	0.37	1.48	0.37	1.48	0.37	1.48
Sodium Lignate	1.48	5.92	1.48	5.92	1.5	6	0	0
45% KOH	0.74	2.96	0.74	2.96	0.74	2.96	0.75	3
Metasol D3TA	0.39	1.56	0.39	1.56	0.39	1.56	0.4	1.6
	100	400	100	400	100	400	100	400
Viscosity	VG		Solid, crumbly when cooled		soft solid, graining when cooled		VG	

Made 2/14/02 read 2/19/02

GYPSUM	Sample	Diameter	Wt after drying	Wt after 2hr soak	% Abs
National	Blank	2 1/2	50.08	67.47	17.39
National	43-1 EW 102 (1.5%)	NP	51.43	65.64	27.63
National	43-1 EW 102 (3%)	NP	51.56	53.73	4.20
National	43-4 SC (1.5%)	NP	51.44	72.77	41.47
National	43-4 SC (3%)	NP	53.02	72.45	36.65
GP	Blank	3 1/2	47.71	63.51	33.12
GP	43-1 EW 102 (3%)	1 3/4	53.02	62.85	18.54
GP	43-4 SC (3%)	NP	52.57	67.16	27.75
Temple	Blank	3 1/2	47.02	61.94	14.92
Temple	43-1 EW 102 (3%)	1 3/4	48.23	56.69	17.54
Temple	43-4 SC (3%)	3/4	50.05	64.39	28.65
LaFarge	Blank	4	45.88	63.96	39.41
LaFarge	43-1 EW 102 (3%)	2	48.78	52.36	7.34
LaFarge	43-4 SC (3%)	3/4	50.05	64.39	28.65

SIGNATURE *Bonnie S. Zepka*
READ AND UNDERSTOODDATE *2-13* 20 *02*
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44

PROJECT NAME Optimizing components in EW102 NOTEBOOK NO. 2542

Continued from p 43

2-13-02

Objective: Optimize the different components in EW102Procedure: make EW102 in usual mannerPut thru bench homogenized 3500X1

Raw Material	SD (44-1)		SE (44-2)		SF (44-3)		SG (44-4)	
Wet phase:	%	gms	%	gms	%	gms	%	gms
Montan	3.3	13.2	3.3	13.2	3.3	13.2	3.3	13.2
3816D Wax	33	132	33	132	33	132	25.12	100.48
Alkyl Phenol	0	0	0.58	2.32	0.5	2	6	24
Water phase:								
Water	60.58	242.32	60	240	61.15	244.6	60	240
Corn Starch	1.6	6.4	1.6	6.4	0.8	3.2	1.2	4.8
Borax	0.37	1.48	0.37	1.48	0.15	0.6	0.28	1.12
Sodium Lign	0	0	0	0	0	0	3	12
45% KOH	0.75	3	0.75	3	0.75	3	0.75	3
Metal D3TA	0.47	1.6	0.4	1.6	0.35	1.4	0.35	1.4
	100	400	100	400	100	400	100	100
Viscosity	VG		VG		half & half separation when cooled		solid, grainy didn't make an emulsion	

Made 2/14/02 read 2/19/02

GYPSUM	Sample	Diameter	Wt after drying	Wt after 2 hr soak	% Abs
National	Blank	2 1/2	50.08	67.47	17.39
National	44-1 SD (1.5%)	NP	49.17	67.71	37.71
National	44-1 SD (3%)	NP	53.28	60.48	13.51
National	44-2 SE (1.5%)	NP	51.41	71.89	39.84
National	44-2 SE (3%)	NP	51.49	69.87	35.7
GP	Blank	3 1/2	47.71	63.51	33.12
GP	44-1 SD (3%)		51.24	55.39	8.09
GP	44-2 SE (3%)	NP	52.19	55.83	6.97
Temple	Blank	3 1/2	47.02	61.94	14.92
Temple	44-1 SD (3%)	1	48.28	59.51	23.26
Temple	44-2 SE (3%)	1	48.53	60.79	25.26
LaForge	Blank	4	45.88	63.96	39.41
LaForge	44-1 SD (3%)	1	48.28	59.51	23.26
LaForge	44-2 SE (3%)	1	48.53	60.79	25.26

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READ AND UNDERSTOODDATE 2-13 20 02
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PROJECT NAME Optimize EW102NOTEBOOK NO. 2545

2-18-02

Objective: Vary ratio of components in EW102 to optimize and create a more stable system

Repeat of experiment 2-13-02 p 43 & 44

Procedure: Make EW102 in usual manner

put through bench homogenizer 3500X7

Raw material	EW102		SC		SD		SE	
Unq. phase	46-1		46-2		46-3		46-4	
	%	gm	%	gm	%	gm	%	gm
Montan	3.28	19.68	3.3	19.8	3.3	19.8	3.3	19.8
3816D wax	33.11	198.66	33	198	33	198	33	198
alkyl Phenol	0.49	2.94	0.5	3	0	0	0.58	3.48
Water phase								
Water	58.54	356.24	60.08	360.48	60.58	363.48	60	360
Corn Starch	1.6	9.6	1.6	9.6	1.6	9.6	1.6	9.6
Borax	0.37	2.22	0.37	2.22	0.37	2.22	0.37	2.22
Sodium Lig	1.48	8.88	0	0	0	0	0	0
45% KOH	0.74	4.44	0.75	4.5	0.75	4.5	0.75	4.5
metasol D3TA	0.39	2.34	0.4	2.4	0.4	2.4	0.4	2.4
	100	600	100	600	100	600	100	600
Solids	41.46		47.80		38.86		38.84	
pH	11.21		12.19		12.17		12.12	

GYPSUM	Sample	Diameter	Wt after drying	Wt after 2hr soak	% Abs
National	46-2 SC (1.5%)	NP	50.19	65.82	31.14
National	46-2 SC (3%)	NP	51.37	62.49	21.65
National	46-3 SD (1.5%)	NP	51.37	70.58	37.10
National	46-3 SD (3%)	NP	49.73	51.69	3.94
National	46-4 SE (1.5%)	NP	52.29	63.65	21.72
National	46-4 SE (3%)	NP	51.52	56.05	8.79
National	(46-1)EW 102 (1.5%)	NP	50.65	64.36	27.07
National	(46-1) EW 102 (3%)	NP	51.71	56.73	9.71
LaFarge	46-2 SC (1.5%)	NC	48.34	52.68	8.98
LaFarge	46-2 SC (3%)	2	45.99	47.83	4.00
LaFarge	46-3 SD (1.5%)	2	50.62	65.14	29.22
LaFarge	46-3 SD (3%)	2	51.21	51.63	0.80
LaFarge	46.4 SE (1.5%)	2	48.82	59.39	21.65
LaFarge	46-4 SE (3%)	NC	49.04	49.32	0.57
LaFarge	(46-1) EW102 (1.5%)	3	46.65	56.78	21.71
LaFarge	(46-1) EW102 (3%)	3	49.79	58.23	16.95

SIGNATURE Bonnie S. Zepka

READ AND UNDERSTOOD

DATE 2-18

DATE

2002

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5-31-02

Objective: Investigate effect of higher Wax solids in the EW102 (33% vs 38%)

Procedure: Mix the following material in the usual manner

Heat to 90°C

Put wax into water, mix for 8 min

Put three bench homogenized @ 3500 x 1

	87-1		87-2		87-2A*	
	38% wax / Ethyl starch		38% wax / acid starch		38% wax / acid starch	
	%	gms	%	gms	%	gms
3816 D	38	30.4	38	30.4	38	30.4
Montan	3.3	26.4	3.3	26.4	3.3	26.4
Alkyl Phenol	0.5	4.0	0.5	4.0	0.5	4.0
Sodium Lig	1	8.0	1	8.0	1	8.0
45% KOH	0.75	6.0	0.75	6.0	0.75	6.0
Borax	0.37	2.96	0.37	2.96	0.37	2.96
K2CO3 Ethyl starch	1.6	12.8	—	—	—	—
C150 acid starch	—	—	1.6	12.8	1.6	12.8
Water	54.08	432.64	54.08	432.64	54.08	432.64
Metasep	0.4	3.20	0.4	3.20	0.4	3.2
				800		800

* 87-2 solids were high, repeated in order to have correct solids

GYPSUM	Sample	Diameter	Wt after drying	Wt after 2hr soak	% Abs
LaFarge	Blank	3 1/2	47.35	66.99	41.48
LaFarge	87-1 (1.5%)	3 1/2	45.9	49.45	7.73
LaFarge	87-1 (3%)	3 1/4	43.79	44.26	1.07
LaFarge	87-2 (1.5%) 38 % wax	3 1/2	49.76	55.69	11.92
LaFarge	87-2 (3%) 38 % wax	3 1/2	50.54	57.81	14.38
LaFarge	87-2A (1.5%) 38 % wax	3 1/2	44.8	51.42	14.78
LaFarge	87-2A (3%) 38 % wax	3 1/2	46.96	50.64	7.84
Stony Point	Blank	2 1/2	50.61	70	38.31
Stony Point	87-2 (1.5%) 38 % wax	2	50.67	62.95	24.24
Stony Point	87-2 (3%) 38 % wax	2	47.42	49.69	4.79
Stony Point	87-2A (1.5%) 38 % wax	1 3/4	49.8	64.65	29.82
Stony Point	87-2A (3%) 38 % wax	1 3/4	52.86	58.59	10.84
Temple	Blank	3 3/4	49.23	66.79	35.67
Temple	87-2 (1.5%) 38 % wax	3 1/2	52.6	66.53	26.48
Temple	87-2 (3%) 38 % wax	3 1/2	48.64	61.13	25.68
Temple	87-2A (1.5%) 38 % wax	3 1/4	46.96	50.64	7.84
Temple	87-2A (3%) 38 % wax	3 1/4	49.26	51.04	3.61
National	Blank	3 1/4	45.76	64.39	40.71
National	87-1 (3%)	2	48.75	53.06	8.84
National	87-2 (3%)	2	53.06	57.84	9.01
National	87-2 (1.5%) 38 % wax	2 1/4	50.82	63.9	25.74
National	87-2 (3%) 38 % wax	2	51.51	57.74	12.09
National	87-2 (1.5%)	2	48.92	49.34	0.86
National	87-2 (3%)	2	49.17	49.16	-0.02
National	87-2A (1.5%) 38 % wax	2	49.07	57.57	17.32
National	87-2A (3%) 38 % wax	2	50.98	59.29	16.30

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READ AND UNDERSTOOD

Bonnie S. Zepka

DATE

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5-31

20 02

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11/21/02

Objective: Determine the optimum level of KOH/metaseal/lignosulfate

Procedure: mix the following material in usual manner
 Put thru pilot homogenizer at 3500 X 1
 Put pressure on before putting in premix

	109-1		109-2		109-3	
	0.4 KOH		3% lig KOH		330 RS	
	back add metaseal				33% waxy acid starch	
	%	gms	%	gms	%	gms
3816 waxy	33	297	33	297	33	297
montan	3.3	29.70	3.3	29.7	3.3	29.7
alk Phenol	0.5	4.50	0.5	4.50	0.5	4.50
Na Lig	1.0	9.0	3.0	27.0	1.0	9.0
45% KOH	0.48	3.6	0.40	3.6	0.75	6.75
Borax	0.37	3.33	0.37	3.33	0.37	3.33
Pearl C	1.6	14.40	1.6	14.4	—	—
E-150	—	—	—	—	1.6	14.4
Water	59.48	535.32	57.6	518.4	59.08	531.72
metaseal	0.4	3.60	0.4	3.6	0.4	3.6
	100	900.45	100	900	100	900
pH	became solid					
solids	before it cooled &		11.28		9.89	
vis	before metaseal					
2/30/25	added					
2/60/25	_____		57.0 @ 5.1%		62.0 @ 6.2%	
			47.5 @ 9.5%		45.0 @ 9.0%	
			premix had		premix had odd	
			add appearance -		appearance -	
			looked like granules		granules floating	
			dark color emulsion		through out	
					after homogenization	
					& cooling emulsion	
					appears to be a	
					good emulsion	

SIGNATURE

Bonnie S. Zepka

READ AND UNDERSTOOD

DATE

8-21

2002

DATE

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9/23/02

Objective: Determine the effect of the following modifications on EW102 wax emulsion

1. Replace Na Lignosulfate with Disol
2. Replace pearl starch with C150 acid modified starch
3. Replace (substitute) C165 acid starch for C150
4. Adjust Borax/starch ratio to a 1:10
5. Eliminate Borax
6. Reduce the amount of Alkyl Phenol by half
7. Increase wax to 36% and ratio montan and KOH
8. Increase wax to 38% adjust ratio of montan & KOH
9. Replace Disol with Diflo GW

Procedure: Heat and mix the following material in usual manner

Put thru bench homogenizer at 3500 PSI

	121-1		121-2		121-3		121-4	
	33% wax/ disol/C150		33% wax/ disol/C165		33% wax/ no borax		Diflo GW	
	%	gms	%	gms	%	gms	%	gms
38% D	33	29.7	33	29.7	33	29.7	33	29.7
montan	3.3	29.7	3.3	29.7	3.3	29.7	3.3	29.7
alkyl Phenol	0.5	4.5	0.5	4.5	0.5	4.5	0.5	4.5
45% KOH	0.75	6.75	0.75	6.75	0.75	6.75	1.0	9.0
Disol	1.0	9.0	1.0	9.0	1.0	9.0	0.75	6.75
Borax	0.37	3.33	0.37	3.33	0	0	0.37	3.33
C150 starch	1.6	14.4	—	—	1.6	14.4	1.6	14.4
C165 starch	—	—	1.6	14.4	—	—	—	—
water	59.10	531.9	59.10	531.9	59.45	535	59.18	532.62
metasol	0.4	3.6	0.4	3.6	0.4	3.6	0.4	3.6
	100	900.10	100	900	100	900	100.1	900.9

SIGNATURE

Bonnie S. Zepke

READ AND UNDERSTOOD

DATE

9-23-2002

DATE

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